



ETHANOL AND GASOLINE MIXTURE – CLASSIFICATION AND EMERGENCY RESPONSE

This bulletin explains the requirements for the classification of ethanol and gasoline mixtures, as well as emergency response measures in the case of an incident. It does not change, create, amend or suggest deviations to the [Transportation of Dangerous Goods Regulations](#) (TDG Regulations). For specific details, consult [Part 2](#) of the TDG Regulations.

Ethanol and gasoline mixture

This document is specifically intended to inform:

- shippers and carriers of dangerous goods of the shipping names and UN numbers that must be used in Canada for fuel mixtures of ethanol (or ethyl alcohol) and gasoline
- emergency responders on how to treat spills and fires involving these mixtures

Classification

The chart below indicates how to properly classify Class 3 mixtures containing ethanol and gasoline for transport.

Ethanol concentration	Shipping name	UN number
10% or less	Gasoline	UN1203
More than 10% and less than 100%	Ethanol and gasoline mixture	UN3475
100%	Ethanol or ethyl alcohol	UN1170

As per [Section 2.3](#) of the TDG Regulations, if a name of dangerous goods is shown as a shipping name in column 2 of [Schedule 1](#), that name must be used as the shipping name. That shipping name and the corresponding data for that shipping name in columns 1, 3 and 4 of Schedule 1 must be used as the classification of the dangerous goods.

Also, as per [Section 2.4](#) of the TDG Regulations, if a substance is included in only one class and one packing group, the substance is dangerous goods and the shipping name in column 2 of Schedule 1 that most precisely describes the dangerous goods and that is most consistent with the class and the packing group determined by the criteria and tests must be selected as the shipping name. That shipping name and the corresponding data for that shipping name in columns 1, 3 and 4 of [Schedule 1](#) must be used as the classification of the dangerous goods.

As a result, you **must not** classify ethanol/gasoline mixtures as:

- UN1987, ALCOHOLS, N.O.S.
- UN1993, FLAMMABLE LIQUIDS, N.O.S.

Furthermore, American domestic transport classifications are not recognized as proper dangerous goods classifications in Canada. Therefore, identification numbers preceded by the letters “NA”, such as NA1987, DENATURED ALCOHOL (as adopted in Title 49 Code of Federal Regulations), are considered inappropriate.

Mixtures containing more than 10% ethanol form a polar/water-miscible (capability of being mixed) flammable liquid that degrades the Aqueous Film Forming Foam (AFFF) which is often used to put out gasoline fires. This is why it is very important to properly identify and classify these mixtures so that emergency responders know how to treat them appropriately in case of a spill or fire.

Emergency response

You must treat fires involving mixtures containing more than 10% ethanol differently than gasoline only fires. For more information, refer to the [Emergency Response Guidebook \(ERG\)](#) (Guide 127 - Flammable Liquids; Polar and Water-Miscible).

The International Association of Fire Chiefs (IAFC) recommends applying a fog stream of Alcohol-Resistant, Aqueous Film Forming Foam (AR-AFFF) on spills or fires of gasoline and ethanol mixture containing more than 10% ethanol.

During emergency planning, exercises or incidents involving Class 3, Flammable Liquids, the checklist called [Aide-mémoire for First Responders, Class 3 – Flammable liquids](#) could be an additional tool.

Compliance with the TDG Act and Regulations

Failure to comply with the [TDG Act](#) and TDG Regulations may lead to fines and/or imprisonment. For more information, you can visit the [TDG website](#) and the [Department of Justice website](#).

Contact us

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